

ABSTRACT of the DISCLOSURE:

A control methodology for regulating the power input and output of an inertial energy storage device, such as a flywheel. The control methodology utilizes a continuously variable transmission [(CVT)] and comprises control of the CVT speed ratio based on feedback of the CVT output torque. *[new paragraph]* [Two embodiments are detailed. For both embodiments the CVT ration is a function of] The CVT ratio control signal is based on an error signal equal to the difference between operator input and CVT output torque. Operator input may be a positive or a negative value, a negative value corresponding to regenerative power. Operator input [is] corresponds to required force or torque analogous to throttle opening or braking effort. *[new paragraph]* This methodology continuously synchronizes the speeds of the inertial energy storage device and powered machinery, keeping frictional losses to a minimum.